

**Evaluation of Position Description****Labor Category/FLSA:** Nonexempt       **Current Position Description**  X   **Proposed Position Description****Date Prepared:** 06/25/03**Approving Official:** Name: Carolyn C. London Signature: Carolyn C. London  
Title: HR Specialist**Position Title/Series/Grade:** Engineering Technician, GS-0802-11**ORGANIZATION:** Division of Property Management, NIEHS**SEE THE EVALUATION STATEMENT THAT WAS ATTACHED TO THE PD.**

**Installation:** National Institute of Environmental Health Sciences, National Institutes of Health, Research Triangle Park, NC  
**Title:** Engineering Technician  
**Occ Series:** 802  
**Pay Plan:** GS  
**Grade:** 11

**Introductory Statement:** The Division of Property Management (DPM) serves all of the NIH Community by providing support for renovations, new construction and maintenance of existing facilities, utilities and grounds. The Division provides professional leadership for the engineering programs of the National Institutes of Health (NIH). The scope of DPM operations is such that the effectiveness with which they are carried out has a major and direct effect on the worldwide biomedical research programs of the NIH. In addition to the main facilities at the Bethesda Campus and in Poolesville, MD, NIH has facilities at Research Triangle Park, North Carolina, Rocky Mountain Laboratory in Montana and the Gerontology Research Center in Baltimore, MD. This position is organizationally and physically located within the DPM organizational subcomponent responsible for the provision of real property management services for the NIEHS facilities in Research Triangle Park, NC.

## **Engineering Technician** **GS 802-11**

### **Duties and Responsibilities**

The incumbent is an Engineering Technician in a multi-discipline section composed of architects and engineers. Scope of duties includes contract document preparation, facilities office and management support, contract administration and general administration.

#### **Contract Document Preparation**

30%

In contract document preparation, the Engineering Technician prepares technical portions of requests for construction-type contracts and develops in conjunction with engineering, laboratory or administrative personnel, an appropriate statement of requirements. The statement of requirements shall include the nature and scope of the work and contain such information as purpose of projects, site limitations, and mechanical and electrical needs. Scope of work shall include statements of the nature of functions to be served, any special considerations that must be recognized in the design development, etc. Researches construction materials and products to ensure quality; uses information in discussions with engineering staff as part of guidelines. Participates in technical evaluations for contractor selection. Researches codes to ensure compliance and prepares engineering reports. Prepares designs that meet the design criteria.

#### **Construction Project Administration**

40%

Incumbent administers contracts that involves reviewing construction project submittals, negotiating with contractors, clarifying contractor wage rates and responding to requests for information (RFI). Once a contract has been awarded, incumbent participates in construction project committee meetings, reviews design submittals, performs field inspections of construction sites, maintains construction logs, reviews contractor daily reports, reviews shop drawings, witnesses system testing and provides input to construction claims. Reviews and evaluates shop drawings, samples and material certifications submitted by contractor for contract and performance requirements.

During construction incumbent is responsible for the technical and administrative execution of contract requirements. In his/her capacity, consults with construction contractor personnel to resolve difficult and often unforeseen problems and latent conditions which might develop during construction. Based on the construction conditions he/she observes, prepares sketches, or changes drawings and/or specifications which resolve the specific problems and incorporates these change documents into contract performance documents. Collects field data using analytical field equipment.

Maintains a construction log noting work location, progress, number of construction personnel, site conditions, conflicts, and any other special situations that arise. Processes progress payment invoices. At the end of construction, obtains release of lien, approves final invoice and forwards completion package to the Contracts and Procurement Management Branch (CPMB).

#### CAD Drawing

20%

Acts as a CAD technician for ~~FEB~~ <sup>MED</sup> drawing files, including the primary source of input to the Branch's CAD documents. Assists the engineering staff by preparing CAD drawings from verbal instructions, written direction or personal field investigations

#### Administrative

10%

Provides general administration support by maintaining catalogs, starting and maintaining as-built drawings, folds blue prints, purges contract project files, maintains drawing files, makes prints, orders from blanket purchase agreements (BPAs) and orders drawing reproductions. Represents FEB in cross-Institute activities. Furnishes expert technical advice to the NIEHS/FEB professional staff as required. Troubleshoots equipment operation problems and arranges shutdowns when necessary. Performs other duties as assigned.

#### Supervision and Guidance

The Engineering Technician is assigned a project with little or no specific information other than the location of work and client point-of-contact. Must have professional knowledge applicable to research facilities both for new design and rehabilitation work. Knowledge is gained through experience, education, and on-the-job training and must be sufficient to enable incumbent to perform his/her duties. Such knowledge shall include ability to incorporate contemporary laboratory needs and requirements into facilities which mandate highly innovative design techniques to accommodate program requirements in a restricted environment. Experience should include biomedical or comparable institutional facilities. In order to meet these objectives, the incumbent must possess a knowledge and ability to perform the following tasks:

- Understand how proposed project requirements may impact various systems (electrical distribution, HVAC, chilled water distribution, etc.).

Understand and recommend the appropriate technical review of action to address the projects impacts on such systems.

A knowledge of the use of state-of-the-art instrumentation (such as airflow meters, liquid flow

**sensors and meters; mechanical and electrical, etc.)**

- Technical knowledge to communicate/negotiate effectively and credibly both verbally and in writing with professional engineers, senior scientific investigators, senior ICD program managers and other scientific personnel with varied technical background.
- Knowledge and working application of codes in the incumbent technical field necessary to verify compliance, such as the National Electric Code, Life Safety Codes, National Fire Protection Codes, etc. A first hand knowledge and experience with construction/project management.
- Knowledge of related fields of endeavor such as mechanical and electrical engineering.
- Exposure to computer concepts and ability to develop working skills in computer aided project management, general spreadsheeting, tables, word processing, and other computer aided analysis or presentation tools. Proficient with the Microsoft Windows environment and AutoCAD for design work.
- Knowledge of and skill in applying concepts and procedures inherent in or associated with project management, financial management, and procurement to achieve project goals and objectives.

Supervision involves giving the incumbent broad instructions for implementing engineering procedures. The incumbent plans for and carries out responsibilities with considerable freedom to act on own initiative. Incumbent has independent responsibility for actions, decisions, and commitments. He/she determines project priorities and deadlines with direction provided only in areas well outside the usual policies and procedures of the section. The incumbent is responsible for exercising mature judgement, analytical thought processes, technical competence, and thoroughness. The incumbent keeps the supervisor informed only of major process milestones, potentially controversial matters or issues with far-reaching implications. Performance is evaluated in terms of effectiveness in accomplishing objectives.

Guidelines include broadly stated agency regulations and policy, specific NIEHS operating practices, and such standard materials as technical manuals, textbooks, codes, and established practices. While helpful and pertinent to assignments, the guidelines embrace a wide range of administrative and technical criteria involving concepts and principles for which the incumbent must either adapt, extend, and/or develop supplemental material because of the individual characteristics of different projects, environmental conditions etc. Sometimes the various guidelines are conflicting on a particular point and the incumbent must determine which has overriding requirements, or develop an acceptable compromise. The incumbent must exercise judgement in applying these guidelines and addressing exceptional cases. Environmental and ecological conditions will have to be addressed to protect the NIEHS as well as adjacent community.

#### **Other Significant Factors**

Assignments are diverse in nature and involve a variety of problems. The incumbent must extend traditional methods and at times must evolve new methods to complete a project. The research environment is dynamic, in constant flux because of rapidly changing technology and scientific program direction. The incumbent must constantly evolve ways to establish new concepts appropriate to resolve unyielding problems.

The primary purpose of the work is to support the NIEHS scientific community in creating those facilities necessary for them to carry out their mission. The work involves investigating and analyzing any of a variety of problems in order to develop means to satisfy them. The chosen method or solution must be timely, must satisfy the functional need, achieve appropriate aesthetic and comfort standards, adhere to Institute policies and regulations, and be economical and safe. Failure to meet these conditions can result in jeopardy to the program, cause inefficiency in operation, and require additional cost for remedial action.

Contacts are made with design clients, regulatory authorities, private architect/engineers, manufacturer's representatives, local and state governments, code producing and enforcing organizations, materials suppliers, contractors, and higher management officials. Purpose of contacts is to discuss functional and other requirements for design projects, obtain facts, opinions, and approval; seek exchange of views with peers; achieve design coordination; recognize current problems of operation or maintenance; development of standards or criteria; resolve field conditions and explain comparative or alternative solutions.

The work is mainly sedentary but site surveys and investigations of construction problems require climbing on ladders, considerable bending, stooping, squeezing through tight places, such as climbing in interstitial space and the use of construction hardware to make checks on utilities. Occasionally a change to work clothes is required.

Work is primarily performed in an office setting except when making field inspections, traveling to remote sites, and training assignments. When making site inspections incumbent may be required to use protective gear such as gowns, masks, coats, goggles, boots, gloves or hard hats depending on the risks involved.

The position requires a background in design, construction, operation, and maintenance of complex buildings and utility systems; and an ability to look beyond immediate technical concerns to examine other significant issues. The many areas of uncertainty create extraordinary demands upon judgement and foresight as to the development of Institute requirements in areas such as new avenues of research. The incumbent must constantly research the literature and other means of communication in the research field, to ensure achievement of the best and latest in equipment and facility design. The resulting quality of the facilities and their ancillary attributes (timeliness, budget, excellence of design, excellence of construction, innovativeness) have an involvement in the quality of research provided by the NIEHS and directly effects the results of these programs.

## **EVALUATION STATEMENT**

**NATURE OF ACTION:** New position.

**LOCATION/BACKGROUND:** This position is in the Engineering Design Section (EDS), Facilities Engineering Branch, Office of Management, NIEHS. The EDS provides architectural and engineering (A/E) services in support of the NIEHS research program. Services include such activities as designing new facilities, improvements, major repairs, studies, and alterations through the use of in-house resources and contracts with A/E firms and private construction contractors.

**REFERENCE:** U.S. OPM PCS for Engineering Technician, GS-802, dated August 1974.

**SERIES AND TITLE DETERMINATION:** The primary duties of this position are to prepare technical portions of requests for construction-type contracts and develop statements of requirements; administer contracts; and to act as a CAD technician. The position requires knowledge of construction and project management and how proposed construction projects impact various systems (electrical distribution, HVAC, chilled water distribution, etc.) (Knowledge of related fields such as mechanical and electrical engineering is required.); ability to communicate orally and in writing with professional engineers and scientists; and ability to prepare CAD drawings and use computers for analysis and management work. Since this work is concerned primarily with the technical engineering aspects of construction projects, and requires practical knowledge of the methods and techniques of engineering and architecture and engineering systems, processes, structures, and materials, it meets the definition of work for the Engineering Technician series, GS-802. The title Engineering Technician is appropriate because this title applies to positions that cover two or more subject-matter specializations listed in the PCS when no one is paramount.

**GRADE DETERMINATION:** Grade levels for the GS-802 series are defined under two broad classification criteria: Nature of Assignment and Level of Responsibility.

**Nature of Assignment:** This includes the scope and difficulty of projects and the skills and knowledges required to complete assignments.

The scope of duties of this position includes contract document preparation, facilities office and management support, contract administration, and general administration. Assignments are diverse and involve a variety of problems, some of which require development of new methods to complete/solve.

In order to prepare technical parts for construction-type contracts and develop statements of requirements containing technical information such as site limitations and mechanical/electrical needs, the incumbent must have knowledge of the design, construction, operation, and maintenance of complex buildings and utility systems and the ability to use many guidelines embracing a wide range of administrative and technical criteria involving concepts and principles for which the incumbent must adapt, extend, and/or develop supplemental material because of the individual characteristics of different projects, environmental conditions, etc. Guidelines may conflict, requiring the incumbent to evaluate and decide among alternatives. Incumbent must communicate technical knowledge verbally and in writing to professional engineers and senior scientific staff members. In addition, incumbent must have working skills in computer aided design and project management.

The nature of assignment of this position exceeds the GS-9 level PCS benchmark because the incumbent must not only apply, but also adapt methods, procedures, and techniques to new uses, as in the GS-11 benchmark. In addition, while assignments at the GS-9 level include applying standard engineering methods and techniques to a block of work of relatively limited scope, or a portion of a larger, more diverse project, this position, like the GS-11 benchmark, plans and accomplishes complete projects, such as redesigning electrical or mechanical systems, requiring independent adaptation of data/information and interpretation and use of precedents.

**Level of Responsibility:** This considers the nature and purpose of person-to-person work relationships and supervision received in terms of review of work and guidance received during work assignments.

Person-to-person contacts include design clients, regulatory authorities, private architects/engineers, manufacturers' representatives, local and state governments, code producing and enforcing organizations, materials suppliers, contractors, and higher management officials. The purpose of contacts is to discuss design project requirements and to obtain facts, opinions, and approvals; coordinate designs; determine maintenance and operation problems; develop standards or criteria; and resolve field conditions and explain comparative or alternative solutions.

Incumbent receives broad work instructions and must plan and carry out assignments on own initiative, including determining project priorities and deadlines. Supervisor is informed when actions are controversial or may have unusual implications.

The level of responsibility of this position exceeds the GS-9 PCS benchmark because the supervisor at that level outlines work requirements and furnishes general instructions as to the scope of objectives, time limitations, priorities, and similar aspects. In addition, the supervisor of GS-9 level employees gives more detailed instructions when new criteria or new techniques are involved and gives advice/assistance on the application of nonstandard methods and techniques or solutions to problems requiring deviations from established practice. The



incumbent, on the other hand, receives far less supervision in terms of work assignments and review of completed work. He/She receives instructions in terms of major objectives, and seldom seeks/requires technical supervisory assistance. Incumbent informs supervisor of work progress, but work is typically not reviewed during progress.

Contacts, based on increased scope of GS-11 assignments, are more extensive than at the lower levels.

**CONCLUSION:** Position is comparable to the GS-11 level, and is thus classified as Engineering Technician, GS-802-11.

  
Ayn Clayborne  
Personnel Management Specialist